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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/940,801

08/29/2001

Yoshiro Yamaguchi

110491

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7590

03/29/2004

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EXAMINER

LANEAU, RONALD

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 03/29/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,801

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Ronald Laneau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 08/29/01 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al (US 6,040,884) in view of Nishida et al (US 6,124,910).

As per claims 1 and 2, Yasuda et al teach a display substrate (B), a back substrate (A), a spacer (4) for forming gap between the display substrate and the back substrate, fine particles in different color and polarity are injected between the display substrate and the back substrate, carbon black and carbon white which are the equivalent of white and black particles. Yasuda et al do not teach a filter of plural colors for transmitting light of a specific wavelength but Nishida et al teach a color filter that is capable of transmitting light as claimed.

It would have been obvious to one of ordinary skill in the art to utilize the color filter as taught by Nishida et al into the device of Yasuda et al because it would provide an excellent image quality that does not include unevenness.

As per claims 3 and 4, the particles taught by Yasuda et al and Nishida et al can be a metal surface and black particles and can have recursive reflectivity and black particles as claimed depending on the materials of fabrication.

As per claim 5, Nishida et al teach a display medium wherein the display substrate and the filter are integrated as claimed (fig. 1B).

As per claim 6, Nishida et al teach a filter that contains colored fine particles as claimed (fig. 7B).

As per claim 10, Nishida et al teach a filter on the substrate as claimed and it is well known to have a protective layer disposed on the filter to diffuse light because it would provide uniformity of the light diffusion and therefore achieve a better color formation.

As per claims 7 and 12, neither Yasuda et al nor Nishida et al teach a spacer that is achromatic and transparent but it is well known in the art to utilize a spacer an achromatic and transparent spacer as claimed because it would obtain a better image quality due to the use of the colorless and transparent spacers within the substrate.

As per claim 13, the combination of Yasuda et al and Nishida et al would give a display medium wherein the display substrate and back substrate comprise plural electrodes facing the filter region as claimed (see Yasuda, figs. 3, 7B, Nishida, fig. 1B).

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4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al (US 6,040,884) in view of Nishida et al (US 6,124,910) and further in view of Watanabe et al (US 5,959,701).

As per claim 8, neither Yasuda et al nor Nishida et al teach a display medium wherein the plural colors are arranged in stripes but Watanabe et al teach a liquid crystal display panel that may be arranged in stripes as claimed (col. 1, lines 1-2).

It would have been obvious to one of ordinary skill in the art to utilize the stripes arrangements as taught by Watanabe et al because it would provide a composite color of red, green, and blue that is of high quality display.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al (US 6,040,884) in view of Nishida et al (US 6,124,910) and further in view of Shirochi (US 5,872,654).

As per claim 9, Yasuda et al nor Nishida et al teach a display medium wherein the filter is any one of a matrix mosaic type, triangle type, and four-pixel type but Shirochi teaches color filters corresponding to three primary colors that are placed relative to each pixel and further discloses that the same color pixels are arranged in a mosaic pattern (col. 3, lines 53-54, and 64-65).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasuda et al (US 6,040,884) in view of Nishida et al (US 6,124,910) and further in view of Arakawa et al (US 6,621,550).

As per claim 11, neither Yasuda et al nor Nishida et al teach a filter that is divided into chromatic and achromatic regions but Arakawa et al teach a color filter in a liquid crystal display that is switched from an achromatic transmission state to a chromatic transmission state on the substrate (col. 2, lines 19-24).

Allowable Subject Matter

7. Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claim 14, an image display device comprising the image display medium according to claim 1, and irradiating means for emitting a white light to the inside of the image display medium from the display substrate side of the image display medium.

As per claim 15, an image display device comprising the image display medium according to claim 1, and irradiating means for emitting a white light to the inside of the image display medium from a side end portion of the display substrate.

Claims 16 and 17 are allowed.

As per claim 16, an image display device comprising:

irradiating means for emitting a white light inside from the display substrate side, and spectral means disposed between the irradiating means and the display substrate.

As per claim 17, an image display method wherein a filter of plural colors for transmitting light of a specific wavelength, wherein the light of specific wavelength passing through the filter of plural colors is reflected in part or in whole by one of the two kinds of particles to display a color of a first tone, and the light of specific wavelength is absorbed in part or in whole by the other of the two kinds of particles to display a color of a second tone different from the first tone, thereby displaying an image.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Sakamaki et al (US 2002/0113871) teach a method of manufacturing an image display medium for encapsulated powdered display elements uniformly between opposed substrates, and an image display medium.
- Kishi et al (US 6,639,580) teach an electrophoretic display device and method of addressing display device.
- Machida et al (US 6,657,612) teach an image display medium driving and an image display device.
- Okada et al (US 6,597,419) teach a liquid crystal display including filter means with 10-70% transmittance in the selective reflection wavelength range.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The

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examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email:
ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

Ronald Laneau
Examiner
Art Unit 2674

rl
March 18, 2004



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600